Meditative Approaches for the Treatment of PTSD

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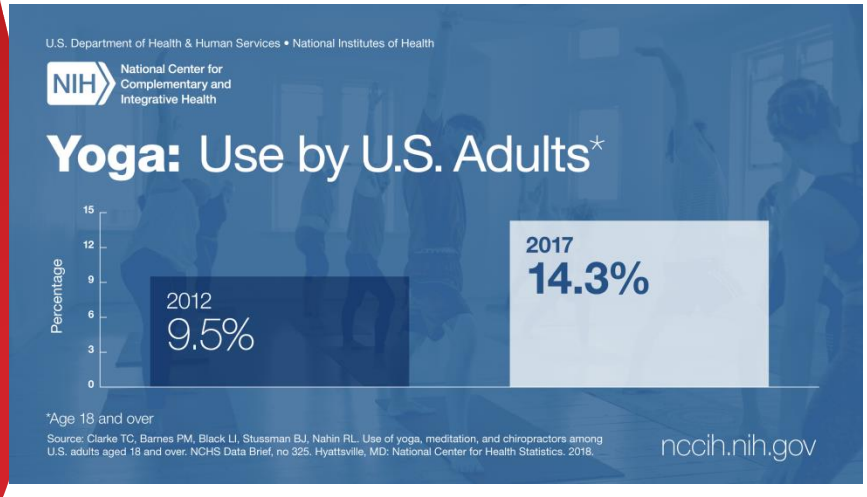
Demand for Meditative Practices

- Increasing since the 1950s (Kessler et al., 2001a)
- **16-38%** endorse use in the past 12 months (Unutzer et al., 2000; Barnes et al, 2008); of 000 Veterans, 10.6% report using meditation and 12.6% practice yoga (Park et al., 2016)
- Greatest continued growth in yoga and meditation



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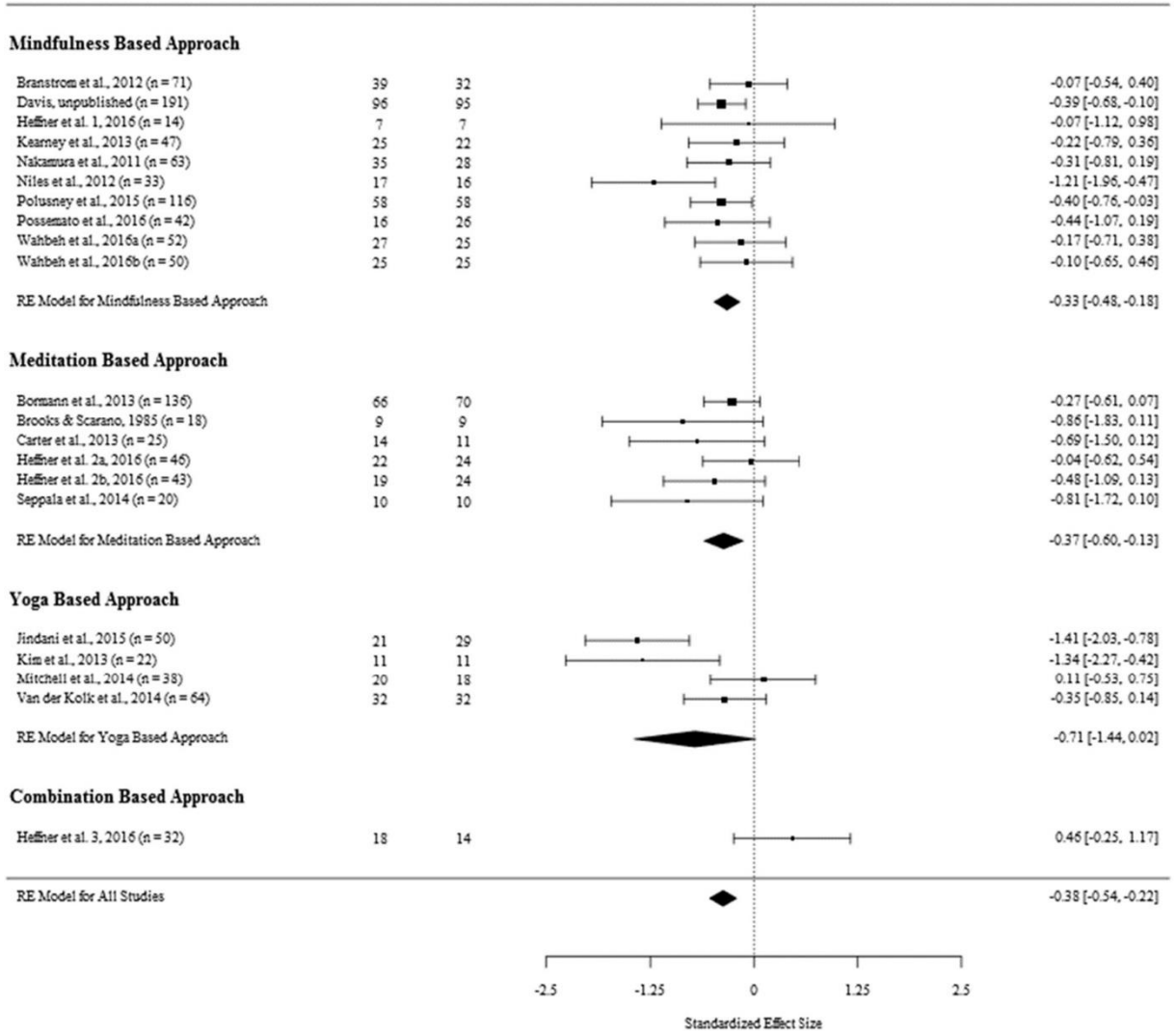
Meta-Analysis (Gallegos et al., 2017)

- 19 trials, 1173 participants
- Small-medium ES overall, "second line"
- Majority of studies involved Veterans



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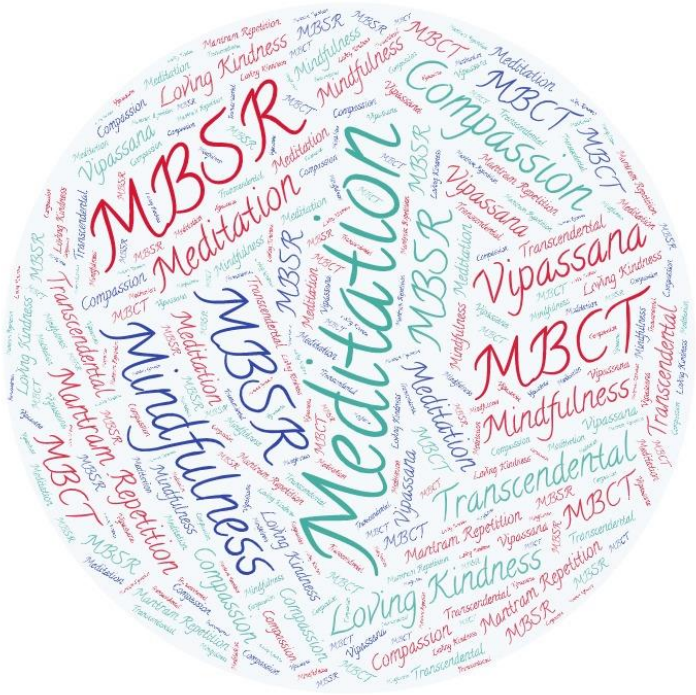
Meditation is Heterogeneous

Same?

- Overall effect



Different?

- Clinical targets
- Mechanisms
- Brain regions
- Biomarkers

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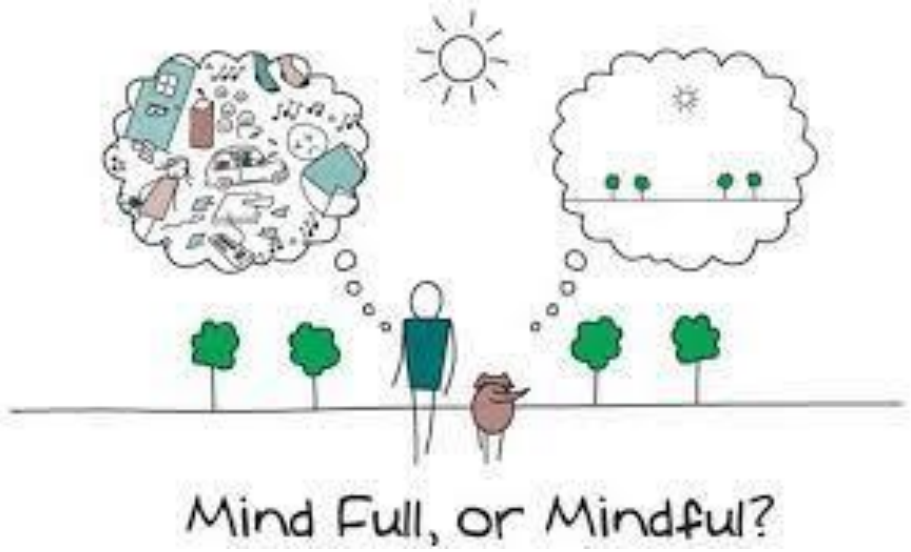
Mindfulness

- "Awareness that arises through paying attention, on purpose, in the present moment, non-judgmentally" (Kabat-Zinn)
- Potential mechanisms: attentional control, rumination and cognitive appraisal



Mindfulness Based Stress Reduction (MBSR)

- Typically taught in eight 1.5 - 3.5 hour sessions + retreat, homework
- Includes body scan, sitting meditation, mindful stretching, mindfulness exercises (e.g., eating, walking)
- Teacher certification required

MBSR Studies

- **RCT (n = 116 Veterans) Veterans, MBSR vs Present Centered Group Therapy (PCGT; Polusny et al., 2015)**
  - » MBSR: 8 weekly 2.5 hour sessions + 6.5 hour retreat
  - » PCGT: 9 weekly 1.5 hour sessions
  - » Advantage to MBSR in terms of symptom change (*d* = 0.40) and quality of life (*d* = 0.41); no difference in loss of diagnosis
- **RCT (n = 214 Veterans from 3 sites), MBSR vs PCGT (Davis et al., 2018)**
  - » MBSR: 8 weekly 90-minute groups + 6 hour retreat
  - » PCGT: 8 weekly 90-minute sessions + lunch
  - » No significant difference between groups on the CAPS-IV
  - » MBSR has greater change in self-reported symptoms at post-treatment but not follow-up
- **Open trial (n = 92 Veterans; Kearney et al., 2012)**
  - » Medium ES changes in PTSD symptoms, depression, mental health-related functioning

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Other Mindfulness Studies

- **Primary care brief mindfulness meditation vs TAU (n = 62; Possemato et al., 2016)**
  - » 4 sessions adapted from MBSR
  - » Medium ES advantage for mindfulness
  - » Later demonstrated corresponding change in cortisol (Bergen-Cico et al., 2014)
- **Mindfulness Based Cognitive Therapy (MBCT) vs TAU (n = 37; King et al., 2013)**
  - » ITT analysis, MBCT outperformed TAU on CAPS, medium ES
- **Mindfulness vs psychoeducation via telehealth (n = 33; Niles et al., 2012)**
  - » 2 in person and 6 phone sessions
  - » Greater reduction in mindfulness group not sustained at follow-up

Mantra-based Meditation

- Focus on a word or phrase to foster a sense of peace and relaxation
- Potential mechanisms: physiological arousal, spiritual connection

Mantra-based Practices

Mantram Repetition Program (MRP)

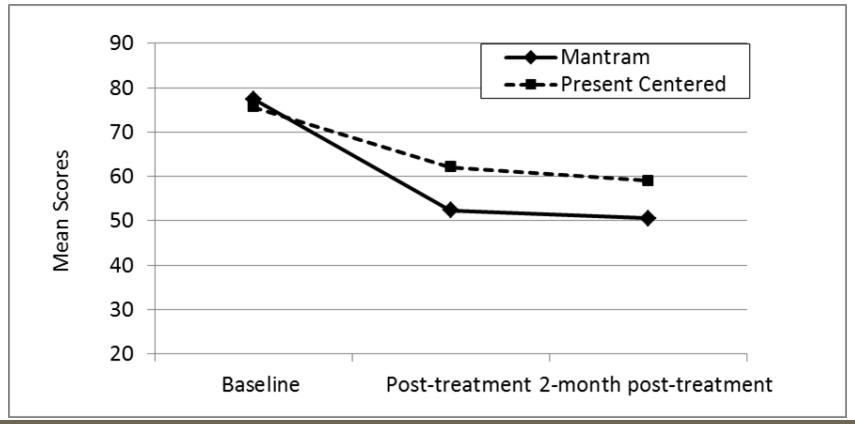
- Mantram + one-pointed attention + slowing down
- Use any place, any time and for any duration
- Spiritual word
- No cost for use, modest training

Transcendental Meditation (TM)

- Repetition of mantra during sitting practice (20 minutes, twice a day)
- Assigned, private mantra
- Requires teacher certification

Mantram Repetition Program (MRP)

- **MRP + usual care (UC) vs UC alone for PTSD in combat Veterans (Bormann et al., 2013)**
  - » Greater reduction in PTSD symptoms, esp hyperarousal; depression; quality of life
  - » Symptom change mediated by spirituality (Bormann et al., 2012)
- **MRP vs Present Centered Therapy (Bormann et al., 2018)**
  - » Greater reduction in PTSD (medium BG ES), loss of diagnosis (59% vs 40%)
  - » Hyperarousal primary impact (Crawford et al., 2019)



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Mobile Mantram Repetition Training (MMRT) (Vannini et al., 2021)

1 **Timepoint 1 (baseline)**

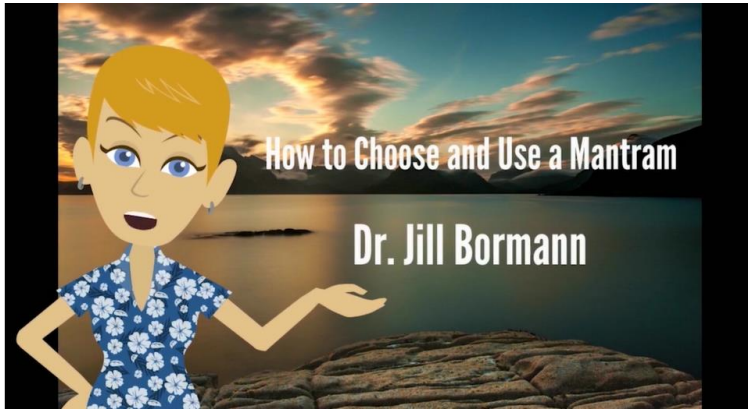
- Demographic Questionnaire
- Module 1: “Choosing a Mantram”

2 **Timepoint 2 (intervention)**

- Module 2: “Slowing Down”
- Module 3: “One-pointed Attention”
- Module 4: “Putting it all Together”
- MR Use Questionnaire

3 **Timepoint 3 (one week follow-up)**

- MR Use Questionnaire



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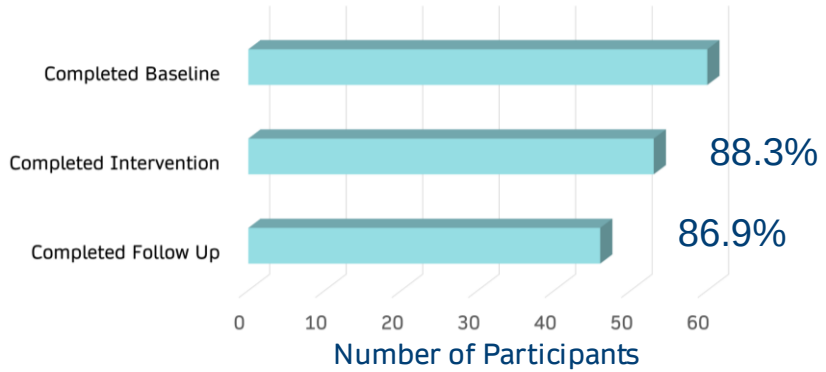
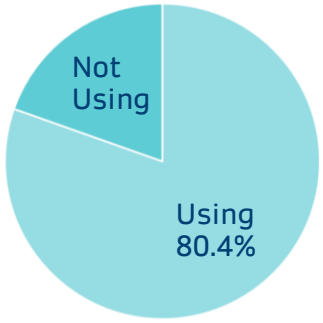
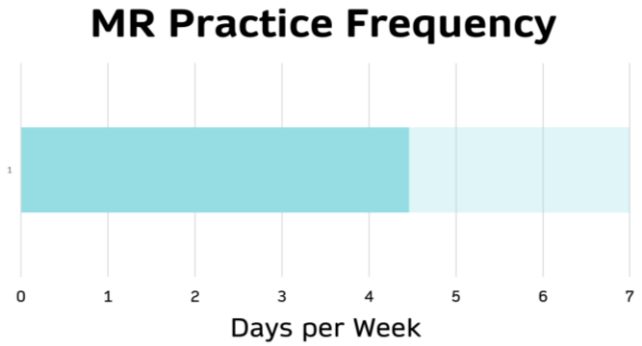
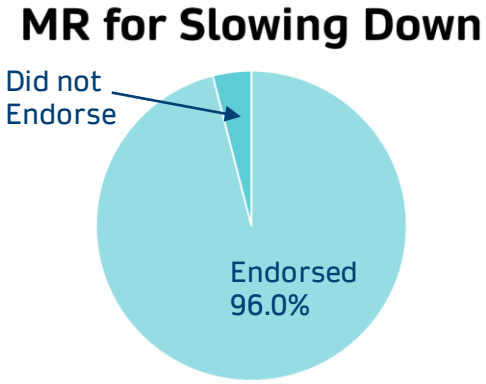
MMRT Usability









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Transcendental Meditation (TM)

- **RCT (n = 203) of TM, Prolonged Exposure (PE) or health education (HE; Nidich et al., 2018)**
- **Open study (n = 29; Kang et al., 2018)**
  - » Reduction in PTSD symptoms and depression
- **Retrospective chart review of servicemembers who received TM (n = 37) or did not (n = 37; Barnes et al., 2016)**
  - » More symptom reduction, less medications (dosage increases and new) with TM
- **Uncontrolled pilot study (n = 5) showed positive effect (Rosenthal et al., 2011)**

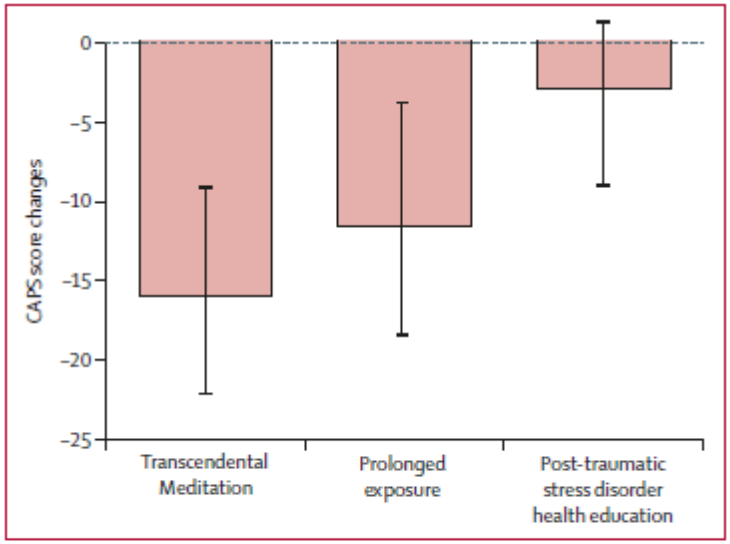


Figure 2: **Changes in point scores from baseline to 3-month post-test for all treatment groups on the CAPS score**
CAPS=clinician-administered PTSD scale.

Compassion and Loving Kindness Meditations

- CM ≠ LKM
- Potential mechanisms: Social connectedness, positive emotion

"Whereas lovingkindness has the characteristic of wishing for the happiness and welfare of others, compassion has the characteristic of wishing that others be free from suffering, a wish to be extended without limits to all living beings."

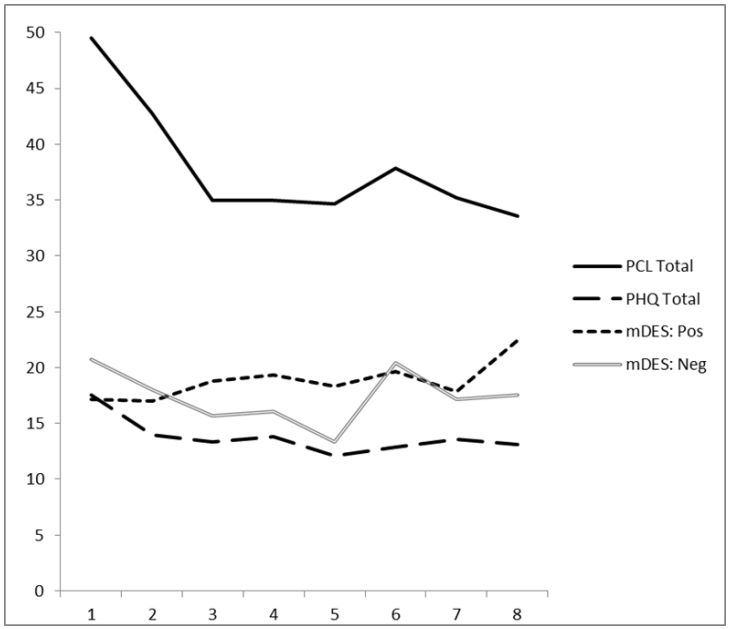
Lovingkindness (mettā) sets our minds to wish all people and all things well, but compassion (karunā) asks, "What are you going to do about it? How will you participate in helping others be relieved from their suffering?"

-Bhikkhu Bodhi

https://medium.com/@cwfa/whats-the-difference-between-compassion-and-lovingkindness-a1b5244a43d2

Compassion Meditation (CM)
(Lang et al., 2017)

- Contemplative practice: mindfulness → open monitoring → common humanity → heartfelt compassion (10 90-minute sessions + guided practice)
- Open trial (n = 36) in Veterans with PTSD



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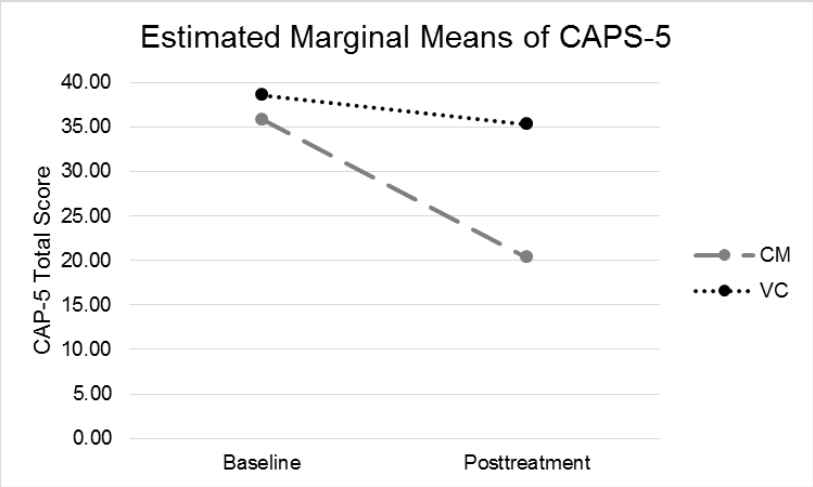
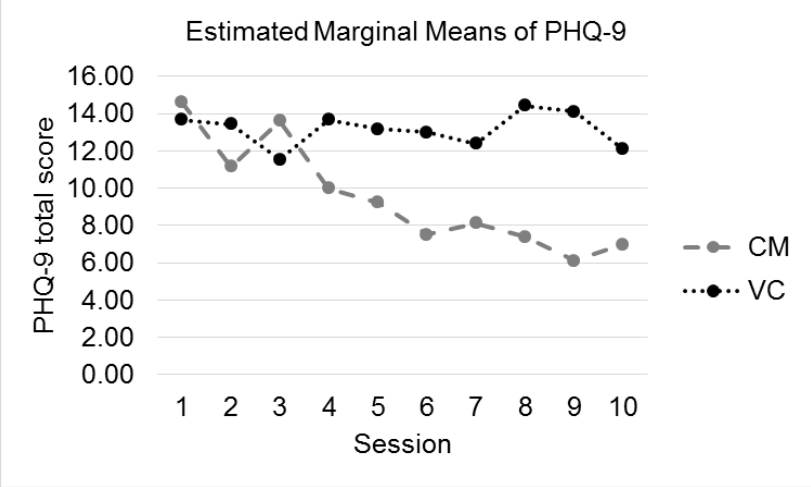
CM Pilot RCT

- **CM vs Veteran.calm (n = 28; Lang et al., 2019)**
  - » Large ES change in PTSD symptoms and depression, outperformed control
  - » Large ES change in social connectedness, positive affect
  - » Medium ES change in mindful awareness, empathy, rumination
  - » Minimal change in positive affect (but practice helps), self-compassion





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Loving Kindness Meditation (LKM)

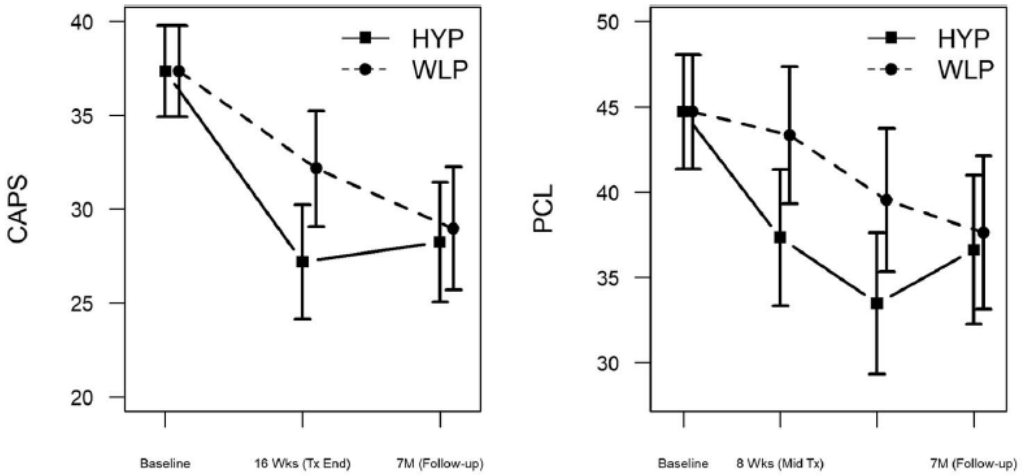
- **Repetition of wish for safety, happiness, health, peace for self and others**
- **Uncontrolled pilot study of LKM as adjunct to usual care (Kearney et al., 2013)**
  - » Positive impact on PTSD symptoms, self-compassion
  - » Driven by positive emotion? (Kearney et al., 2014)
- **RCT LKM vs CPT-C (n = 184; Kearney et al., 2021)**
  - » Both reduced PTSD symptoms (medium ES, 27.5-29% loss of diagnosis) but LKM led to more change in depression (small ES)
  - » Attrition relatively high (67% attended 6+ LKM sessions, 54% attended 6+ CPT sessions)

Yoga

- Meditative movement paired with breath
- Potentially meaningful differences among practices?
- Potential mechanisms: attentional control, distress tolerance

Yoga Evidence

- **RCT holistic yoga program vs wellness lifestyle program (n = 209; Davis et al., 2020)**
  - » Yoga led to greater change at post-treatment (large ES) but was not maintained (*Figure 1* below)
- **Sudarshan Kriya Yoga (SKY) vs CPT-C (n = 85; NCT02366403)**
  - » Medium ES change in PTSD symptoms in both over 6 weeks
  - » SKY 25 hours vs CPT-C 12 hours
- **Significant heterogeneity in prior studies (ES range 0.08-1.65; Wells et al., 2016)**



Panel A: Changes over time in CAPS Panel B: Changes over time in PCL

Figure 1. Changes in Primary Outcomes Over Time. HYP = holistic yoga program; WLP = wellness lifestyle program; CAPS = Clinician Administered PTSD Scale; PCL = PTSD Checklist.

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Summary

- **Mindfulness best studied but effects are modest**
- **Mantra-based are promising as first-line interventions**
  - » Possibility of targeting hyperarousal
- **CM and LKM are promising but conclusions are premature**
- **Yoga shows significant heterogeneity itself**

Where do we go from here?

- **Safe, tolerable, popular – “second line” at this point**
- **Individual variability should not be discounted**
- **Implementation models**
  - » Delivery hubs
  - » Virtual and remote instruction
  - » Use guidelines vs manuals
  - » Complementary, alternative, integrative
- **Practice effects**

QUESTIONS/DISCUSSION

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